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(54) **METHOD FOR RETRIEVING DATA FROM AN INFORMATION NETWORK THROUGH LINKING SEARCH CRITERIA TO SEARCH STRATEGY**

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(58) **Field of Search** **707/3, 4, 5, 6, 707/513, 1, 2, 10**

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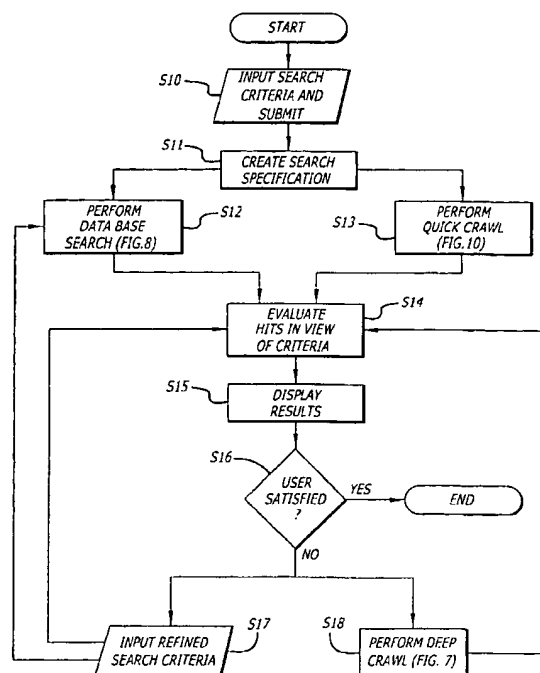
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(57) **ABSTRACT**

A user of an information network is provided with information contained within at least one of plurality of network sites in view of a user search criteria by searching a database that is populated with a plurality of other search criteria provided by other network users and a plurality of search strategies. Each of the search strategies includes information regarding network sites likely to contain information relevant to the other search criteria. The other search criteria within the database are linked with the search strategies. At least one search strategy is selected from the database based upon the user's search criteria. The search strategy is executed and the results are provided to the user in one embodiment, users can employ software agents to assist in searching, collecting, and reporting on data in accordance with the user's specified criteria.

27 Claims, 8 Drawing Sheets



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TITLE: Method for retrieving data from an information network
through linking search criteria to search strategy

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Abstract Text - ABTX (1):

A user of an information network is provided with information contained within at least one of plurality of network sites in view of a user search criteria by searching a database that is populated with a plurality of other search criteria provided by other network users and a plurality of search strategies. Each of the search strategies includes information regarding network sites likely to contain information relevant to the other search criteria. The other search criteria within the database are linked with the search strategies. At least one search strategy is selected from the database based upon the user's search criteria. The search strategy is executed and the results are provided to the user in one embodiment, users can employ software agents to assist in searching, collecting, and reporting on data in accordance with the user's specified criteria.

TITLE - TI (1):

Method for retrieving data from an information network through linking search criteria to search strategy

Detailed Description Text - DETX (14):

In one configuration of the system, in accordance with the present invention, rules contains two classes, Template and Mappings. Template specifies the specific business rules by providing fields and ranges of acceptable values, for example:<INPUT NAME="price" TYPE=dollars RANGE="0 to 100000">;<INPUT NAME="mfr _year" TYPE=date RANGE="1900 to 2000">.

Template is used particularly by the classes in the Source package 42, which is described below, when the classes need to know the template in order to create

an industry specific document, such as job posting or house for sale ad. Mappings contain business categories that are related to each other, such as film and camera, automobile and insurance, etc. Mappings are used to lookup products and services and provide intelligent direct marketing rules. The representation syntax of Template and Mappings classes is preferably extended markup language (XML). As such, the classes in the Source package could utilize the MPF library to parse these templates. It will be appreciated, however that other languages may also be used.

Detailed Description Text - DETX (21):

The infrastructure Data package 36 includes MPF, Element, Document and Data Model classes. MPF contains the utilities to read/write documents in the standard metadata format, such as XML/ resource description framework (RDF). The MPF package 40 represents the "low-level" metadata processing facilities. These include document writers, RDF and XML parsers, XML processors and the like. Element represents the basic element of a Document structure and may include a data object, its name and importance weight. In accordance with the present invention, Element allows for fine tuning of a search criteria. For example, a search for a house in the price range of \$200-250K in the Los Angeles area may be qualified with the criteria that the location of the housing is more important than the price. Document contains an array of Elements. Document represents Element information in a standard, preferably metadata, format. Data Model is a Java class that encapsulates all the necessary attributes of the data, but in standard Java notation. This class serves as an easy representation of the data model without the overhead of XML syntax.

Detailed Description Text - DETX (34):

At step S5, the system creates a super agent 100 by asking the user to give a personal name to the agent. At this time, the user may deposit text, HTML and XML files, graphics, video and other types of current and evolutionary file formats describing the item the user is interested in finding or offering. The user also provides a keyword or keyword phase describing his area of interest. At this time, the user may also provide negotiation parameters and consummation instructions, described further below. The user may also provide credit card information and security information such as an encryption certificate and digital signature. The information provided by the user may be placed in the system server 18 on behalf of the user's super agent 100. Alternatively, the client side of the system can host the user's deposited files if requested to

do so by the user.

Detailed Description Text - DETX (40):

Continuing with the "plug-in" example, the user selects the area of interest by either selecting a plug-in from the list or by providing the information himself. For example, if a user is interested in obtaining information on an automobile, the plug-in may request information from the user regarding the make, model and the price range of the car of interest. The plug-in may also request ranges of acceptable values, such as price range, yes/no feature options, and weight factors to indicate the importance of different criteria rated on a numeric scale, such as from 1 to 9, with more important criteria given a higher number.

Detailed Description Text - DETX (54):

For example, in a real estate search, if the price of the house has a weight of "3" (not very important) and location has a weight of "9" (very important), the filter agent 106 includes offers with higher prices in the same location, but rejects all offers within the same price range, but in a different neighborhood. As a further example, if the search was related to the purchase of a laptop computer, the search agents 102 would likely return a number of computers available for purchase over the computer network. The filter agent 106 rates the offers and creates a value scale, with the better deals presented on the top of the list. The better deal does not necessarily mean the lowest price. The intelligence of the filter agent 106 takes into consideration a vast array of factors that determine the optimum value according to the criteria entered by the user. For example, criteria regarding weight, processor speed, size of hard drive is considered when rating the documents found by the search agents 102. This decision making is performed by one or more of the system's algorithms.

Detailed Description Text - DETX (61):

Upon completion of a search, if authorized by the user, the search agent may negotiate and complete a transaction on behalf of the user. In accordance with the present invention, the user may provides his search agent with initial negotiation and consummation parameters. These parameters are provided through a GUI and may include, for example, the user's maximum price, starting offer price, counteroffer parameters, e.g., amount of incremental increases in counteroffer price and time between counteroffer increases. Additional parameters may include a limit on negotiation time, a request that the search agent pick the best offer within a certain time frame, that the agent present

the user with a rating of offers considering the key factors along with price and that the agent withdraw all unaccepted offers/counteroffers no later than a specified time. If the negotiation process is successful and the agent is authorized to do so, the agent completes the transaction using the credit card information and the security information stored in the system database.

Detailed Description Text - DETX (62):

With reference to FIG. 1, the agents 22 reside on the server side 12. In an alternate configuration of the system, the agents 22 may be downloaded to the client side 10, for example, into the CPU of the user interface 16. In this configuration, a search agent 102 is deployed from the client side 10 and may pause its search when the user goes off line from the network, and resume the search when the user goes on line again. This, however, may consume considerable network bandwidth and computing resources. Accordingly, it is preferred that a user deploy his agent from one of the system servers 18 where it can constantly run a search. Search agents 102 running on a system server external to the user interface 16 benefit from indexing and cross-referencing facilities in the system database 20 that make the search jobs more efficient.

Detailed Description Text - DETX (73):

Using the criteria entered by the user, the system also creates a filter, i.e., "gatekeeper", agent 106 for filtering all incoming responses to a user's publication. These filter agents 106 may be resident in the client side 10 CPU or the server side 12 system server 18 and are similar to a search agent 102, except instead of traversing the URLs, the filter agent 106 remains at home and accepts incoming documents. The filter agent 106 scans incoming documents responsive to the user's publication and performs the same match making process as previously described with reference to the search application of the system. As such, the user is able to configure the filter agent 106 to block out any irrelevant responses.

Detailed Description Paragraph Table - DETL (18):

TABLE 18 Table: Products Purpose: To store a4a product information.

Comments: Volume: Minimal..depending on number of products offered..

FIELD

DESCRIPTION COMMENT Product_number(k) Prod_desc Description of product

Prod_price Price of product Prod_st_date Date Product is available from

Prod_end_dt Date Product is taken off market License_period Length of time product is licensed for. Authority_lvl Authority level inherent in A client

can reduce but product. 1 = browse only not augment authority 2 = requires client level here. The author- verification before ity level per agent is purchase, 3 = can make referenced in the purchases etc without agent_instantiation client verification table.

Claims Text - CLTX (13):

13. The method of claim 12 wherein said negotiation parameters includes at least one of a maximum offer price, starting offer price, counteroffer prices, time between counteroffers and negotiation time.